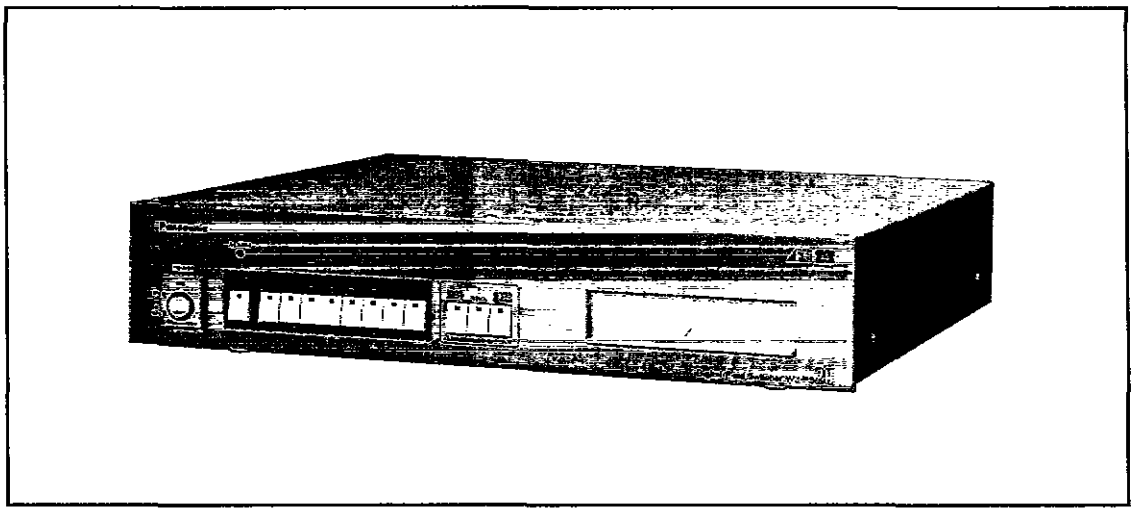
Operating Instructions

Video Multiplexer

WJ-FS20



Panasonic

Before attempting to connect or operate this product, please read these instructions completely.

Dit model is onderworpen aan de EEG-richtlijn (ter voorkoming van radio-interferentie) 87/308/EGG.

Denne model opfylder EF direktiv 87/308/EF (for forebyggelse af radiointerferens).

Este modelo cumple con la norma EC (para interferencias de radio 87/308/EEC).

La Società PANASONIC ITALIA S.p.A., importatrice di questo prodotto, dichiara che questo apprarecchio è conforme alle disposizioni della direttiva C.E.E./87/308 (D.M. 13 aprile 1989).

CAUTION:

Before attempting to connect or operte this product, please read the label on the bottom.

For Australia

THIS APPARATUS MUST BE EARTHED.

To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring. Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.
The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The serial number of this product may be found on the bottom of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

For U.K.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 13 amp fuse is fitted i n this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 13 amp and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ♡ on the body of the fuse.
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

**IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.**

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.
WARNING: This apparatus must be earthed.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code.

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

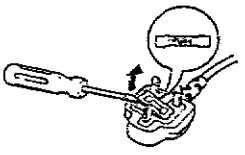
As the colours of the wire in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

The wire which is coloured **green-and-yellow** must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol ⏚ or coloured **green** or **green-and-yellow**.

The wire which is coloured blue must be connected to the terminal in the plug which is marked with the letter N or coloured black.

The wire which is coloured **brown** must be connected to the terminal in the plug which is marked with the letter L or coloured **red**.

How to replace the fuse
Open the fuse compartment with a screwdriver and replace the fuse and fuse cover.



This model conforms of the EC directive (for radio interference) 87/308/EEC.

This apparatus was produced to BS 800:1987.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

ENGLISH VERSION

CONTENTS

PREFACE 2
FEATURES 2
IMPORTANT NOTICE 2
PRECAUTIONS 2
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS 3
RACK MOUNTING 6
CONNECTION 7
A. Basic System 7
B. Cable Connection 8
SETTING UP OF THE MENU 9
A. Menu 9
B. Setting up of the Menu 1 9
C. Setting up of the Menu 2 13
D. Setting up of the Menu 3 17
SETTING UP OF THE TIME LAPSE VTR (AG-6730) 22
OPERATION 22
A. Monitoring of the Camera Picture 22
B. Recording on the Time Lapse VTR 22
C. Monitoring of the Time Lapse VTR playback picture 23
SYSTEM APPLICATIONS 26
SPECIFICATIONS 33
STANDARD ACCESSORIES 33

PREFACE

The WJ-FS20, the Video Multiplexer, is designed for recording camera picture on the Time Lapse VTR by field signal. Up to 8 cameras can be connected to the WJ-FS20 and either single output picture or quad output picture is available for monitoring. In order to find out specific camera picture from the output of the Time Lapse VTR, the title and time/date can be added on camera picture and/or the specific camera picture can be recalled by simply pressing the Camera Selection Button.

FEATURES

- Up to 8 cameras (either black & white camera or colour camera) can be connected to the WJ-FS20 and the field signal is recorded on the Time Lapse VTR.
- Non synchronized cameras can be used.
- Sequential switching mode and quad picture mode (at VTR playback only) are available.
- Easy to find out the specific camera picture using internal Time Date Generator and Character Generator.
- On-screen setting up of the menu.
- Memory back-up (approx.72 hours) for the Menus.
- Remote control from computer using RS-232C is available.

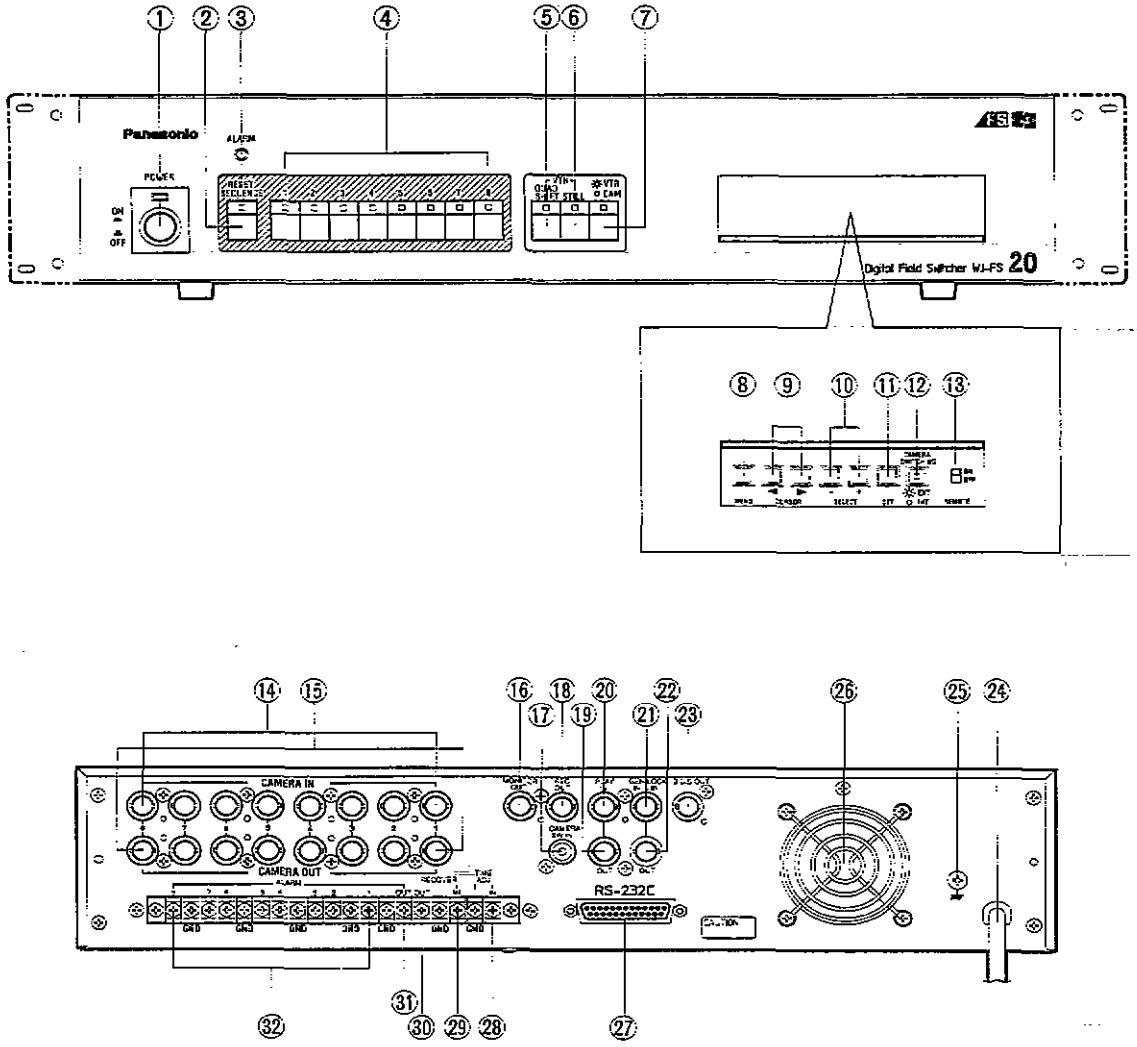
IMPORTANT NOTICE

1. The playback picture of the Time Lapse VTR with linear mode may be disturbed by another channel picture. In this case playback again for the disturbed picture scene or playback VTR without linear mode.
2. This operating instructions explains the operation using with the Time Lapse VTR of AG-6730 or equivalent.

PRECAUTIONS

- Do not attempt to disassemble the unit. In order to prevent electrical shock, do not remove screws or covers. There are no user-serviceable parts inside.
- Do not abuse the unit. Avoid striking, shaking etc. It could be damaged by improper handling or storage.
- Do not use strong or abrasive detergents when cleaning the unit body.
- Do not expose the unit to water or moisture, and do not operate it in wet or humid areas.
- Do not use the unit in an extreme environment where either high temperature or high humidity exist.
- Do handle the unit with care.
- Do take immediate action if ever the unit does become wet. Tune the power off and refer servicing to qualified service personnel. Moisture can damage the unit and also create a danger of electric shock.
- Use the unit under conditions where temperature is within -10°C to +50°C, and humidity is below 90%. When installing the unit in the rack, it is recommended to install the fan.
- The input power source is 220VAC to 240VAC, 50Hz.
- Every necessary procedures with regard to install this unit should be made by qualified service personnel or system installer.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



1. **Power ON/OFF Switch (POWER ON/OFF)**

2. ***Sequence/Alarm Reset Button (RESET/ SEQUENCE)***
   This button has two modes, the Sequence mode and Alarm Reset mode.
   - Sequence mode : The LED is turned on and the unit is in sequence mode when pressing this button.
   - Alarm Reset mode : The LED is turned off and the alarm mode will be canceled when pressing this button.

3. ***Alarm Indicator (ALARM)***
   When the unit is in the alarm mode, this indicator starts blinking.

4. **Camera Selection Button (1/2/•••/7/8)**
   The desired camera can be selected by pressing one of these buttons (so called Spot mode). The LED on the corresponding button is turned on.

5. **Quad Shift Button (VTR/QUAD SHIFT)**
   This button will be used when the Time Lapse VTR is in playback mode.
   - The single playback picture turns to quad playback picture by pressing this button once. The LED is turned on.
   - The first quad picture turns to second quad picture by pressing this button again. The first quad picture and the second quad picture will be seen in turns by pressing this button continuously. The LED stays on.

6. Still Button (STILL)
When the Still picture is obtained, this button is used with other buttons.

7. VTR/Camera Selection Button (VTR/CAM)
Either the camera picture or the Time Lapse VTR playback picture can be selected by pressing this button.
- LED On : Time Lapse VTR playback picture through function of WJ-FS20
- LED Off : Camera picture
- LED Blinking : Time Lapse VTR playback picture looping through via WJ-FS20

8. Menu Button (MENU)
This button should be pressed to enter the menu mode or escape from the menu mode.

9. Cursor Button (CURSOR)
This button is used to change the position of the cursor in the menu mode.
- (◄): Moves to left, up and previous menu.
- (►): Move to right, down and next menu.

10. Select Button (SELECT)
This button is used to search the character or choose the value from table in the menu mode.
- (+) button : proceeds forward
- (–) button : proceeds backward

11. Set Button (SET)
This button is used to fix the item of the menu or to open the specific menu.

12. Time Lapse Recording/Normal Recording Selection Button (CAMERA SWITCHING INT/EXT)
Either the Time Lapse Recording mode or Normal Recording mode can be selected by pressing this button.
- LED On (EXT) : Time Lapse Recording mode.

Notes:
1. Camera switching command signal is supplied by Time Lapse VTR.
2. In case the unit is in alarm mode, LED is turned off and the recording mode changes to Normal Recording mode.

- LED Off (INT) : Normal Recording mode.

Notes:
1. Camera switching command signal is generated by this unit.
2. The recording speed of the Time Lapse VTR should be set to 3 hours recording mode.

13. Remote On/Off Switch (REMOTE)
This switch is used when the remote control operation is needed.
When the remote control is to be operated, turn this switch to the ON position. If not, keep this switch to the OFF position.

ON : RS-232C control signal should be supplied to this unit.
The buttons on the front panel will be disabled except buttons on the sub-panel.

OFF : Keep always to the OFF position without remote control operation.

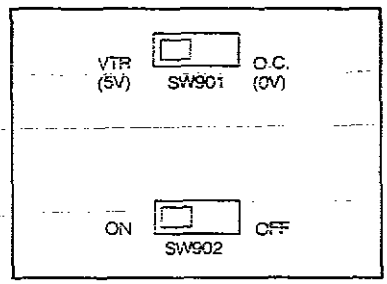
14. Camera Input Connectors (CAMERA IN)
The camera signals are connected to these connectors. When connecting a coaxial cable to the Camera Output Connectors (15), the high impedance video loop is automatically selected. At all other times, these connectors are automatically terminated with 75 ohms.

Note: In WJ-FS20, the specific control signal is added on the Vertical Blanking for Time Lapse VTR recording so that any other control signals located on the Vertical Blanking can not be acceptable for the WJ-FS20.

15. Camera Output Connectors (CAMERA OUT)
A looping through of input camera signals are provided at these connectors. When connecting a coaxial cable to this connector, the high impedance video loop is automatically selected.

16. Monitor Output Connector (MONITOR OUT)
A composite video signal is provided to this connector for monitoring. The sequential switching picture, Time Lapse VTR playback picture and setting up of Menus are displayed.

Note: When switching (sequential) the non-synchronized camera signals, the picture may be disturbed. To hide the disturbance, the disturbed picture period can be masked by the black signal. When switching (sequential) the synchronized camera signals, the picture will not be disturbed, that is, no masking is necessary. The black signal is switched on and off by SW902 located in the unit.



SW901: Switched to VTR position at factory.

SW902: Switched to ON position at factory.

<Front>

17. Camera Switching Signal Input Connector (CAMERA SW IN)
The camera switching signal from Time Lapse VTR is supplied to this connector.

18. Recording Output Connector (REC OUT)
The recording signal for the Time Lapse VTR is provided via this connector.

19. Playback Input Connector (PLAY IN)
The playback signal from Time Lapse VTR is supplied to this connector. When connecting a coaxial cable to the Playback Output Connector (20), the high impedance video loop is automatically selected. At all other times, this connector is automatically terminated with 75 ohms.

Note: If the character is added on the picture generated by the Time Lapse VTR, be sure to insert the character on the video signal portion. If it is added on the Vertical Blanking period, the control signal of WJ-FS20 will be disturbed.

20. Playback Output Connector (PLAY OUT)
A looping through of Time Lapse VTR playback signal is provided at this connector. When connecting a coaxial cable to this connector, the high impedance video loop is automatically selected.

21. Gen-Lock Signal Input Connector (GEN-LOCK IN(VS))
This connector is used to receive VS signal (Video & Sync) as a Gen-Lock signal.When connecting a coaxial cable to the Gen-Lock Output Connector (22), the high impedance Gen-Lock loop is automatically selected. At all other times, this connector is automatically terminated with 75 ohms.
Note:
1. The subcarrier signal (SC) of the WJ-FS20 will not be synchronized with VS signal.
2. Do not supply jittery signal such as line-locked VS-signal or VTR playback signal.

22. Gen-Lock Signal Output Connector (GEN-LOCK OUT(VS))
A looping through of Gen-Lock input signal is provided at this connector. When connecting a coaxial cable to this connector, the high impedance Gen-Lock loop is automatically selected.

23. Black-Burst Signal Output Connector (BBS OUT)
The Black-Burst Signal for use with the synchronization of the system is provided via this connector to other products.

24. Power Cord

25. Ground Terminal

26. Cooling Fan
It is recommended to replace it every 30,000 hours.

27. Remote Control Connector (RS-232C)
The RS-232C signal is supplied to this connector for remote controlling this unit by personal computer. The pin configuration is shown below.

Pin configuration
1. FG (Frame ground)
2. SD (TXD)
3. RD (RXD)
4. RS (RTS)
5. CS (CTS)
6. DR (DSR)
7. SG (Signal ground)
20. ER (DTR)

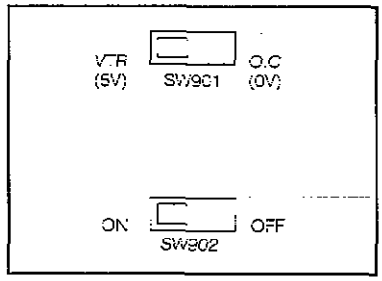
Other pins are not used.

Note: See the command table on page 31 for signal information.

28. Time Adjustment Signal Input Terminal (TIME ADJ IN)
This terminal has 2 functions.
1) This terminal accepts the time adjustment signal (0VDC) from Time Lapse VTR. It enables to match the time between WJ-FS20 and Time Lapse VTR.
2) This terminal accepts the camera switching pulse (sequential) from external switcher.

29. Alarm Recover Input Terminal (RECOVER IN)
This terminal accepts the alarm recover signal (0VDC) from the Time Lapse VTR. The WJ-FS20 returns to the normal operation mode from alarm mode.

30. Alarm Recover Output Terminal (RECOVER OUT)
The alarm recover signal, either 0VDC or 5VDC, is output from this terminal to the Time Lapse VTR by pressing the Sequence/Alarm Reset Button (2).
- The selection can be made by SW901 located in the unit as shown.



SW901: Switched to VTR position at factory.

SW902: Switched to ON position at factory.

<Front>

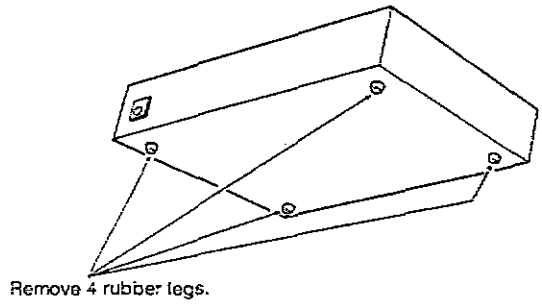
31. Alarm Output Terminal (ALARM OUT)
When the Alarm Signal Input Terminal (32) is activated by the external sensor unit, the alarm signal is provided to other devices via this terminal.
Note: This terminal is composed of the Open-Collector Circuit. The supply voltage is 24V DC and the supply current is less than 100 mA.

32. Alarm Signal Input Terminals (ALARM IN)
These terminals accept the alarm signal (0VDC) from the sensor unit.

RACK MOUNTING

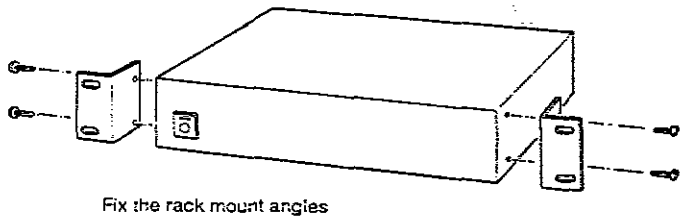
When the Video Multiplexer WJ-FS20 is to be mounted on a EIA 19-inch rack, use Rack Mount Angles (provided) and 4 screws (provided, M4 x 10).

1. Turn off the power of the unit.
2. Remove 4 screws fixing the rubber legs and remove 4 rubber legs from the unit.



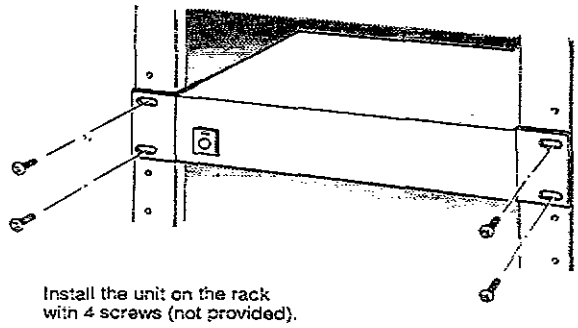
Remove 4 rubber legs.

3. Attach the Rack Mount Angles on both sides and fix them with 4 screws (provided).



Fix the rack mount angles

4. Install the unit on the rack with 4 screws (to be procured locally).



Install the unit on the rack with 4 screws (not provided).

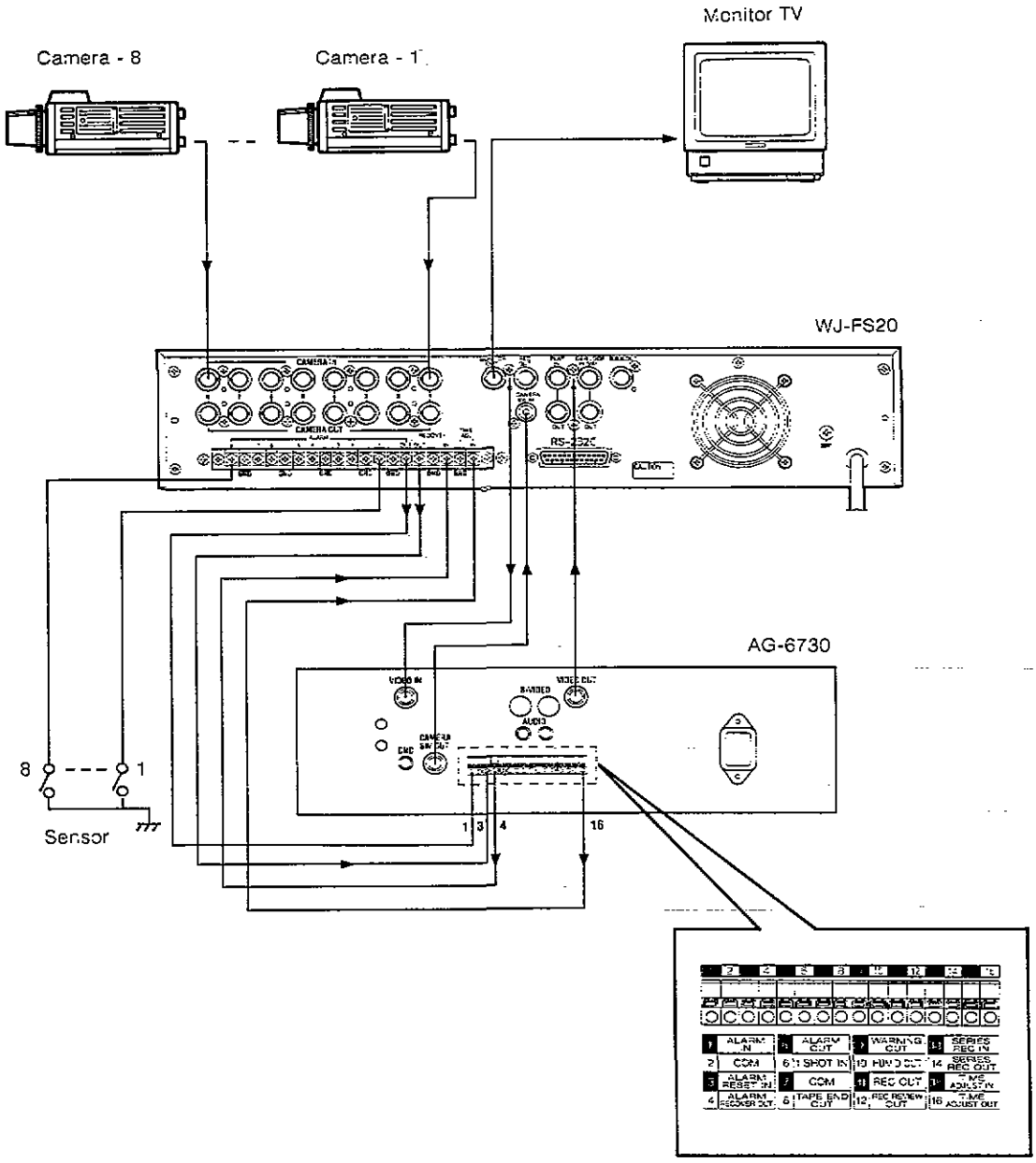
Cautions:

1. Keep one unit or more space for both the top and bottom of the unit or install a cooling fan in the rack.
2. Secure the rear of the unit to the rack using additional mounting angles (to be procured locally) when the vibration is added to the rack.

CONNECTION

A. Basic System

- Refer to the connection diagram shown below for the basic system.
- See page 26 for the application of the system.

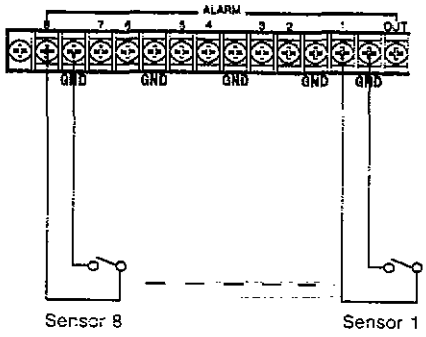


Notes:
1. The manual alarm reset can be made by WJ-FS20.
2. The automatic alarm reset can be made by Time Lapse VTR.

B.Cable Connection

1. Connection with sensor unit.

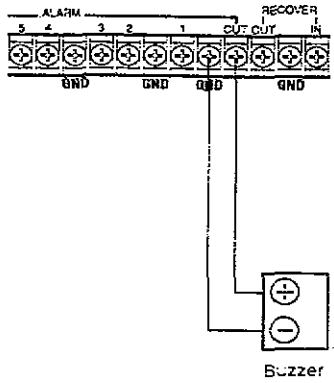
- Connect the sensor switch with the Alarm Signal Input Terminal (32) as shown below.



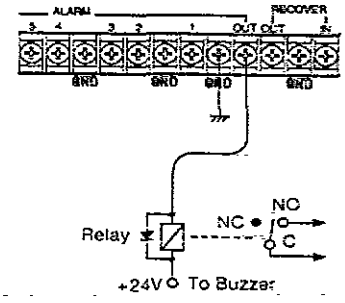
1) The sensor should be composed of a Open-Collector Output with 12VDC power operation or Non-Voltage contact.
2) The voltage at the Alarm Signal Input Terminal (32) should be 0 - 0.2 VDC when the terminal is activated.

2. Connection of the Alarm Output Terminal (31)

- Make sure the polarity of the buzzer to meet with this output terminal.
  The positive (+) terminal of the buzzer should be connected with the Alarm Output Terminal (31).
- The Alarm Output Terminal (31) is composed of the Open-Collector Output and the capacity is 24VDC, 100mA or less.
  1) In case the buzzer is operable within the capacity of Alarm Output Terminal (31), connect buzzer as shown.



2) In case the buzzer is not operable within the capacity of Alarm Output Terminal (31), the external relay unit should be used as shown below.

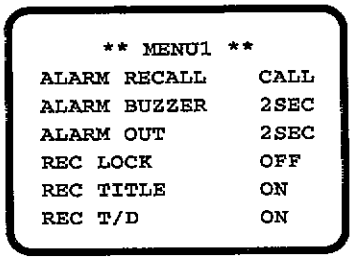


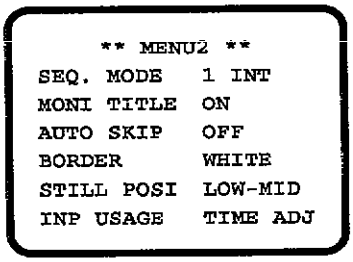
NC: Normally Contact
NO: Normally Open
C: Common

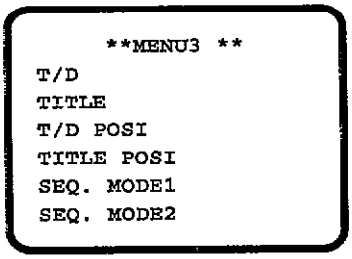
SETTING UP OF THE MENU

A. Menu.

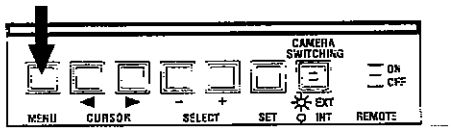
- The WJ-FS20 utilizes 3 user set-up menus using on-screen character display.



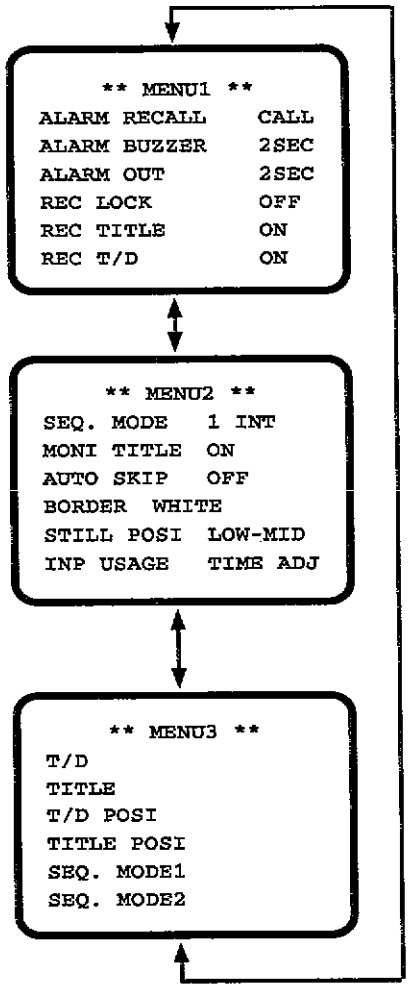




- The menu mode can be entered by pressing the Menu Button (8) for 2 seconds.

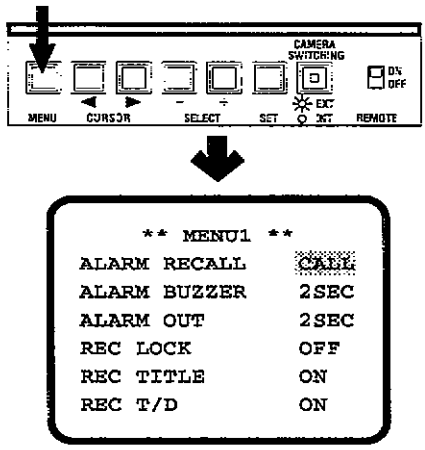


- The menu screen can be changed by pressing the Cursor Button (9) repeatedly.



B. Setting up of the Menu 1

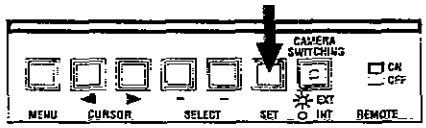
- Press the Menu Button (8) for 2 seconds. The Menu 1 will be displayed and the CALL of ALARM RECALL starts blinking.



1. ALARM RECALL

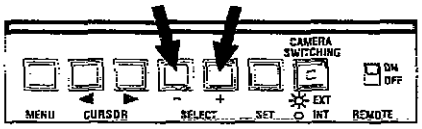
When the alarm signals are supplied to the WJ-FS20, the order number of the arrival of alarm signal, date, time and camera number will be recorded. These records can be recalled on the monitor screen with following procedure.

- Press the Set Button (11) while CALL is blinking. These records are displayed on the monitor as shown.




```
** ALARM RECALL **
30 12.MAR 12:43:12 1CH
29 12.MAR 12:34:45 2CH
28 11.MAR 11:23:56 2CH
27 10.MAR  7:23:12 5CH
26 10.MAR  6:46:23 8CH
25  9.MAR 17:34:13 6CH
24  9.MAR 13:11:02 7CH
23  8.MAR  6:46:23 4CH
22  5.MAR 10:24:43 2CH
21  4.MAR 13:51:02 1CH
```

- Press the Select Button (10). If you press (-) button, the old record will be displayed. If you press (+) button, the recent record will be displayed. Each display contains 10 records at maximum.



(–)

```
** ALARM RECALL **
10  25.JAN 13:25:10 2CH
 :       :
 :       :
 :       :
 2   7.JAN 19:22:03 8CH
 1   5.JAN  8:45:31 6CH
```

(+)

```
** ALARM RECALL **
20 25.FEB 18:45:10 5CH
 :       :
 :       :
 :       :
13  9.FEB  8:30:10 1CH
12  7.FEB  5:01:10 5CH
11  6.FEB 20:22:03 4CH
```

- In case there is no record, "1" is displayed as shown.

```
** ALARM RECALL **
1  ..... ........ ...
```

Note: Up to 100 alarm inputs can be recorded.

- After being observed the record, press the Set Button (11) to return to the Menu 1 picture.

Note: To delete the record, follow the next step. All records will be deleted.

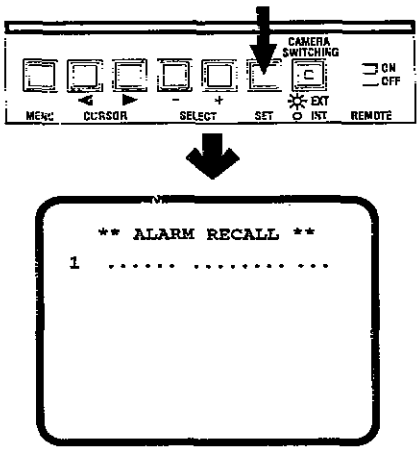
1) Reset the menu to the Menu 1 mode.
2) Move the cursor to the ALARM RECALL.

```
** MANU1 **
ALARM RECALL    CALL
ALARM BUZZER    2SEC
ALARM OUT       2SEC
REC LOCK        OFF
REC TITLE       ON
REC T/D         ON
```

3) Select the CLEAR using Select Button (10).

```
** MANU1 **
ALARM RECALL    CLEAR
ALARM BUZZER    2SEC
ALARM OUT       2SEC
REC LOCK        OFF
REC TITLE       ON
REC T/D         ON
```

4) Press the Set Button (11).

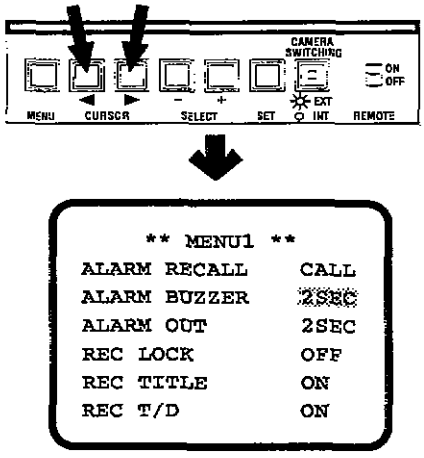


- Confirm ALARM RECALL mode.

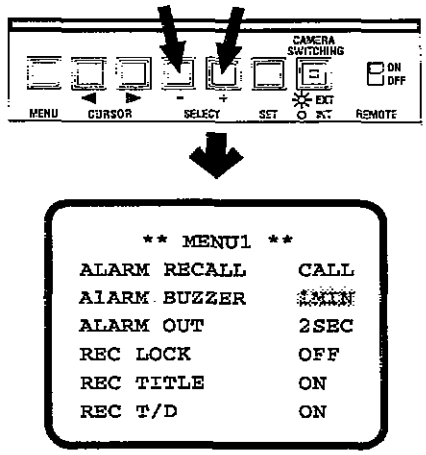
2. ALARM BUZZER

When the alarm signal is supplied to the WJ-FS20, the alarm buzzer sounds. The duration of the sound can be set with following procedure. (The duration has been set to the 2SEC at the factory.)

- Reset the menu to the Menu 1 mode.
- Move the cursor using Cursor Button (9) to the ALARM BUZZER mode.

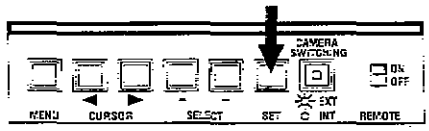


- Select the desired time by operating the Select Button (10).



Note: The time available from 0-30 seconds, 1-5 minutes or EXT. When the EXT is selected, the buzzer continues to sound until the Alarm Recover Signal from Time Lapse VTR is supplied to the Alarm Recover Input Terminal (29).

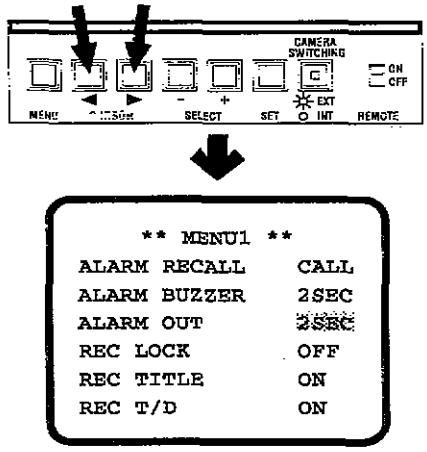
- After being set, press the Set Button (11). The cursor moves to the ALARM OUT mode.



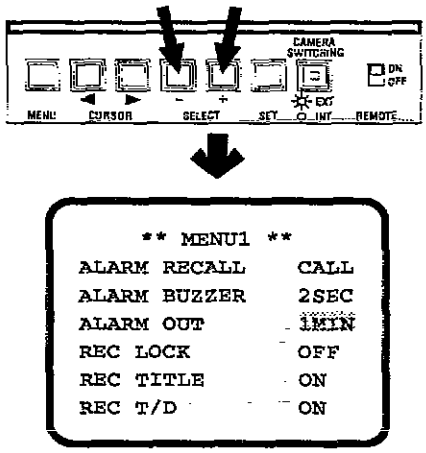
3. ALARM OUT

In case the WJ-FS20 is in the alarm mode, the Alarm Output Signal is provided to other devices via Alarm Output Terminal (31). The duration of the alarm output signal can be set with following procedure. (The duration has been set to the 2SEC at the factory.)

- Reset the menu to the Menu 1 mode.
- Move the cursor using Cursor Button (9) to the ALARM OUT mode.



- Select the desired time by operating the Select Button (10).



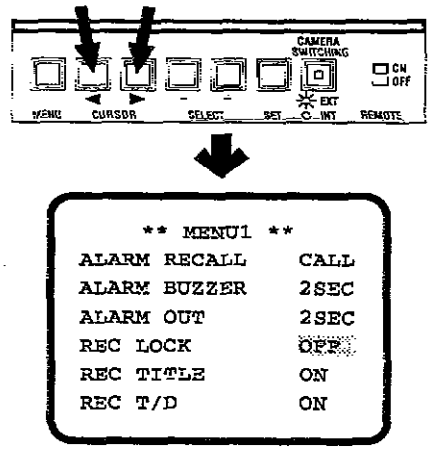
Note: The availability of the time is the same as 2. ALARM BUZZER.

- After being set, press the Set Button (11). The cursor moves to the REC LOCK mode.

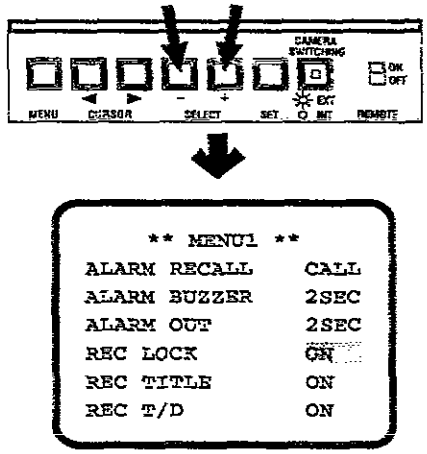
4. REC LOCK

The function of VTR/Camera Selection Buttons (7) can be frozen by setting up of this mode. This mode protects the supplying of the recording output signal from misoperation of the VTR/Camera Selection Buttons (7). (This mode has been set to the OFF at the factory.)

- Reset the menu to the Menu 1 mode.
- Move the cursor using Cursor Button (9) to the REC LOCK mode.



- Select either ON or OFF by operating the Select Button (10).



Notes:

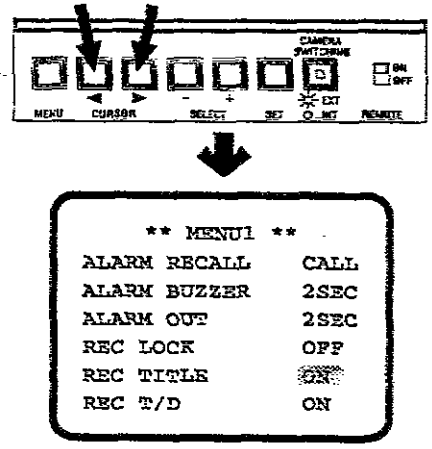
1) When the ON is selected, the VTR/Camera Selection Buttons (7) can not be operated. The function of this button is always in the Camera mode, that is, the recording output signal is supplied to the Time Lapse VTR for recording.
2) When the OFF is selected, the VTR/Camera Selection Buttons (7) can be operated.

- After being set, press the Set Button (11). The cursor moves to the REC TITLE mode.

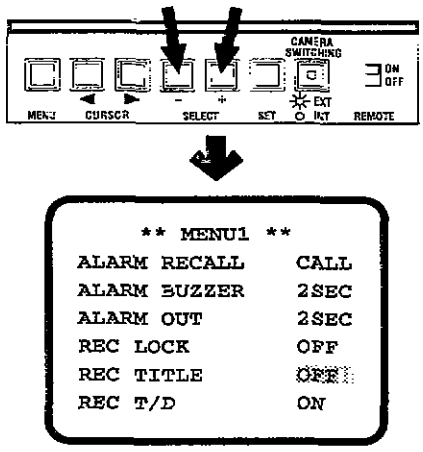
5. REC TITLE

This function is used to select if the title is added on the recording picture or not. (This mode has been set to the ON at the factory.)

- Reset the menu to the Menu 1 mode.
- Move the cursor using Cursor Button (9) to the REC TITLE mode.

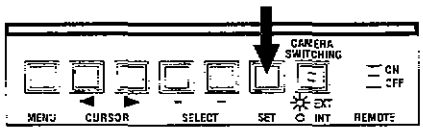


- Select either ON or OFF by operating the Select Button (10).



Note: When the ON is selected, the title is added on the recording picture. When the OFF is selected, the title is not added.

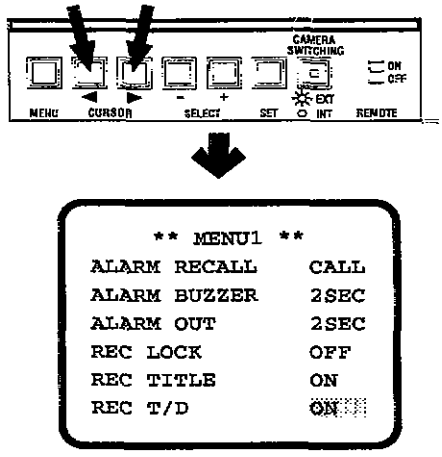
- Refer to Setting up of Menu 3 on page 17 for editing the title.
- After being set, press the Set Button (11). The cursor moves to the REC T/D mode.



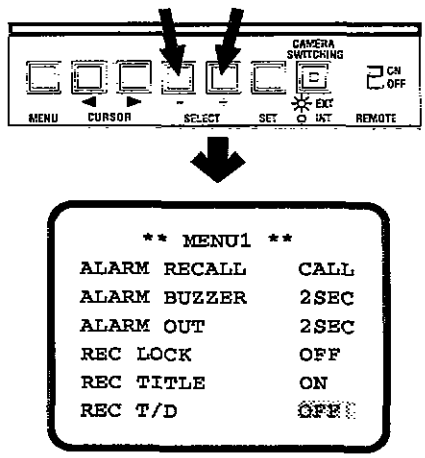
6. REC T/D

This function is used to select if the time and date are added on the recording picture or not. (This mode has been set to the ON at the factory.)

- Reset the menu to the Menu 1 mode.
- Move the cursor using Cursor Button (9) to the REC T/D mode.

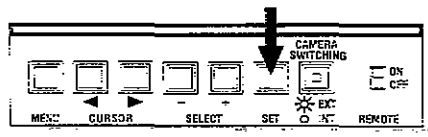


- Select either ON or OFF by operating the Select Button (10).



Note: When the ON is selected, the time and date are added on the recording picture. When the OFF is selected, the time and date are not added.

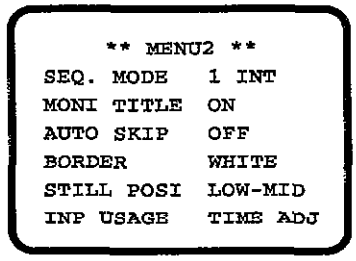
- Refer to Setting up of Menu 3 on page 17 for adjusting the time and date.
- After being set, press the Set Button (11). The cursor returns to the ALARM RECALL mode.



- When you want to escape from Menu 1 mode, press the Menu Button (8).

C. Setting up of the Menu 2.

Access the Menu 2 mode referring to A.Menu on page 9.



1. SEQ. MODE

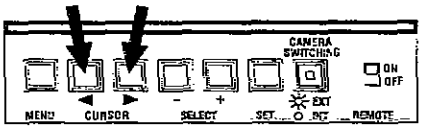
One of three kinds of sequential modes can be selected by this mode- 1 INT, 2 INT or 1 EXT.

1) When 1 INT or 2 INT is selected, the preset sequential mode will be applied to the camera switching.

Refer to 5.SEQ.MENU of Menu 3 on page 17 for presetting of the sequential mode.

2) When 1 EXT is selected, the camera switching will be performed by the trigger from external switcher. The trigger should be supplied to the Time Adjustment Signal Input Terminal (28) on the rear panel of WJ-FS20.

- Reset the menu to the Menu 2 mode.
- Move the cursor using Cursor Button (9) to the SEQ.MODE mode.




```
** MENU2 **
SEQ. MODE    1 INT
MONI TITLE   ON
AUTO SKIP    OFF
BORDER       WHITE
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

- Select one of the desired mode which has been preset before by operating the Select Button (10).

```
** MENU2 **
SEQ. MODE    2 EXT
MONI TITLE   ON
AUTO SKIP    OFF
BORDER       WHITE
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

Note: If "1 EXT" is selected, refer to the 6.INP USAGE mode for further setting up.

- After being set, press the Set Button (11). The cursor moves to the MONI TITLE mode.

2. MONI TITLE

This function is used to select if the title and time/date are added on the monitor output picture or not. (This mode has been set to the ON at the factory.)

- Reset the menu to the Menu 2 mode.
- Move the cursor using the Cursor Button (9) to the MONI.TITLE mode.

```
** MENU2 **
SEQ. MODE    1 INT
MONI TITLE   ON
AUTO SKIP    OFF
BORDER       WHITE
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

- Select either ON or OFF by operating the Select Button (10).

```
** MENU2 **
SEQ. MODE    1 INT
MONI TITLE   OFF
AUTO SKIP    OFF
BORDER       WHITE
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

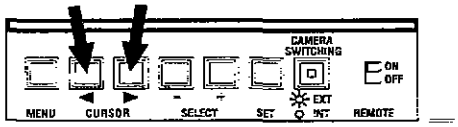
Note: When the ON is selected, the title and time/date are added on the monitor output picture. When the OFF is selected, they are not added.

- Refer to 1.T/D and 2.TITLE of Menu 3 on page 17 for editing the title and adjusting the time/date.
- After being set, press the Set Button (11). The cursor moves to the AUTO SKIP mode.

3. *AUTO SKIP*

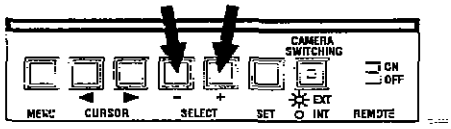
When the camera is not connected to the Camera Input Connectors (14), no output picture is obtained. In this case the sequence of camera switching may or may not be necessary on this channel. The selection of automatic skipping over these channels can be made using AUTO SKIP mode.

- Reset the menu to the Menu 2 mode.
- Move the cursor using the Cursor Button (9) to the AUTO SKIP mode.




```
** MENU2 **
SEQ. MODE    1 INT
MONI TITLE   ON
AUTO SKIP    OFF
BORDER       WHITE
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

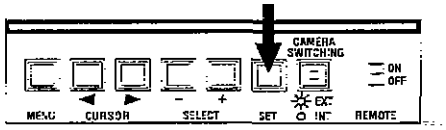
- Select either ON or OFF by operating the Select Button (10).




```
** MENU2 **
SEQ. MODE    1 INT
MONI TITLE   ON
AUTO SKIP    ON
BORDER       WHITE
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

Note: When the ON is selected, automatic skipping occurs. When the OFF is selected, all the camera channels will be sequentially switched.

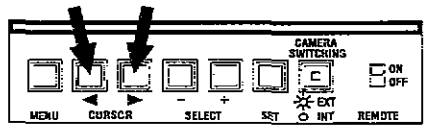
- After being set, press the Set Button (11). The cursor moves to the the BORDER mode.



4. BORDER

The cross border line is displayed on the monitor in the Quad mode. The colour of the border line can be selected from white or black using this mode. (This mode has been set to the WHITE at the factory.)

- Reset the menu to the Menu 2 mode.
- Move the cursor using the Cursor Button (9) to the BORDER mode.



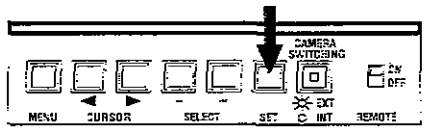

```
** MENU2 **
SEQ. MODE    1 INT
MONI TITLE   ON
AUTO SKIP    OFF
BORDER       WHITE
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

- Select either WHITE or BLACK by operating the Select Button (10).

```
** MENU2 **
SEQ. MODE    1 INT
MONI TITLE   ON
AUTO SKIP    OFF
BORDER       BLACK
STILL POSI   LOW-MID
INP USAGE    TIME ADJ
```

Note: The border line can not be recorded on the Time Lapse VTR. It is superimposed on the monitor output picture.

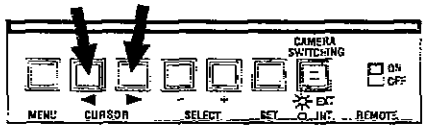
- After being set, press the Set Button (11). The cursor moves to the STILL POSI mode.

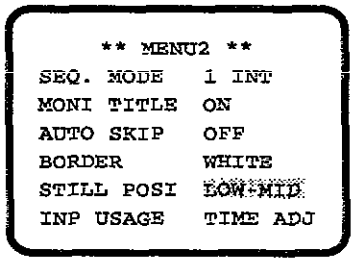


5. STILL POSI

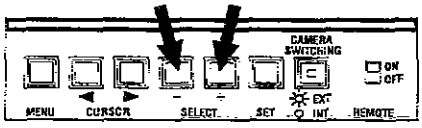
When the WJ-FS20 is in the Still mode, the letters of STILL is displayed on the monitor TV. The position of "STILL" can be changed using this mode. (This mode has been set to the MID-LOW at the factory.)

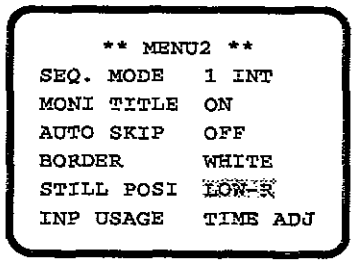
- Reset the menu to the Menu 2 mode.
- Move the cursor using the Cursor Button (9) to the STILL POSI mode.

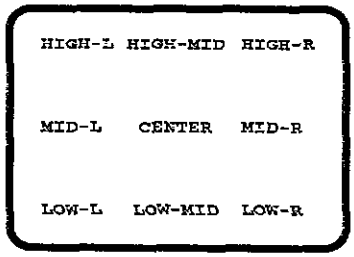




- Select the desired position shown below by operating the Select Button (10).







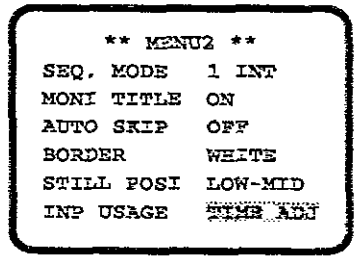
- After being set, press the Set Button (11). The cursor moves to the INP USAGE mode.

6. INP USAGE

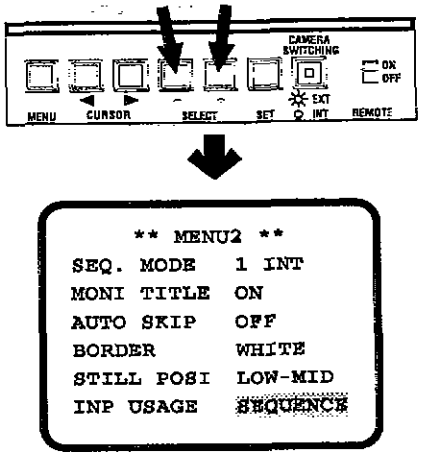
This mode has 2 functions. One is for the time adjustment of the Time Date Generator (TIME ADJ) and the other is for the camera switching. (SEQUENCE). (This mode has been set to the TIME ADJ at the factory.)

1) TIME ADJ : The time between the WJ-FS20 and Time Lapse VTR can be matched at the time of 9:00AM. The adjustment control signal should be supplied to the Time Adjustment Signal Input Terminal (28) on the rear panel from the Time Lapse VTR.
2) SEQUENCE : This mode is used with 1.SEQ.MODE mentioned above. The SEQUENCE mode should be selected when the 1 EXT mode has been selected at 1.SEQ.MODE.

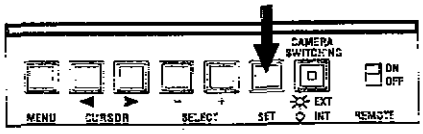
- Reset the menu to the Menu 2 mode.
- Move the cursor using the Cursor Button (9) to the INP USAGE mode.



- *Select either* TIME ADJ or SEQUENCE by operating the Select Button (10).



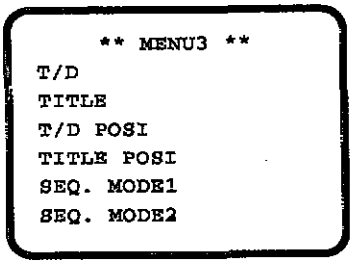
- After being set, press the Set Button (11). The cursor returns to the SEQ.MODE mode.



- When you want to escape from Menu 2 mode, press the Menu Button (8).

D. Setting up of the Menu 3.

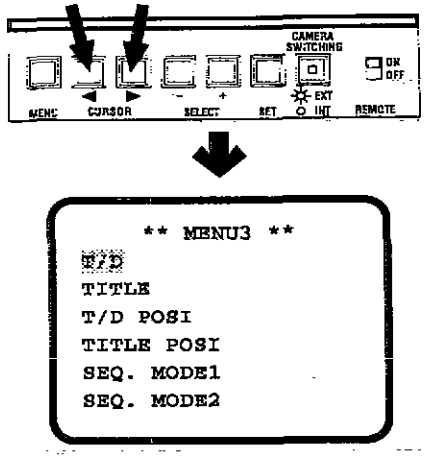
Access the Menu 3 mode referring to A.Menu on page 9.



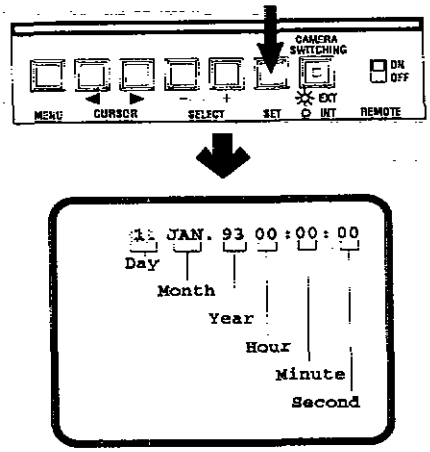
1. T/D

The time and date of the internal Time Date Generator can be adjusted using this mode.

- Reset the menu to the Menu 3 mode.
- Move the cursor using the Cursor Button (9) to the T/D mode.

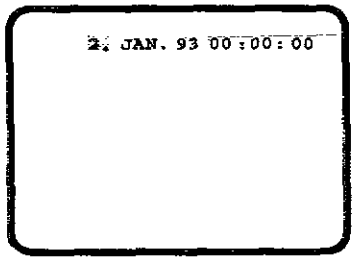


- Press the Set Button (11). The time and date will be displayed as shown.

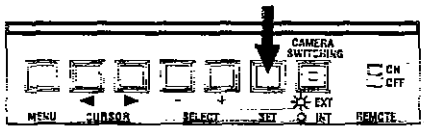


- Move the cursor to the position where you want to change.

- Adjust the time and/or date by operating the Select Button (10).



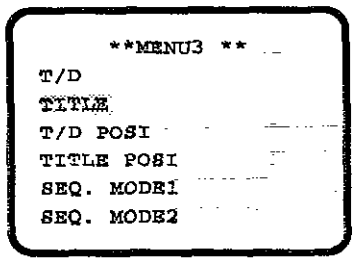
- After being set, press the Set Button (11). The T/D mode returns to the Menu 3 mode and cursor moves to the TITLE mode.



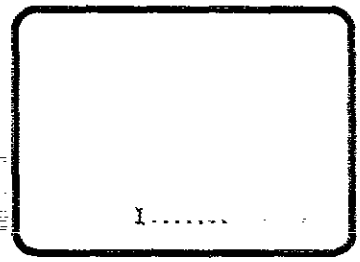
2. TITLE

Up to 8 letters can be selected to edit the title.

- Reset the menu to the Menu 3 mode.
- Move the cursor using the Cursor Button (9) to the TITLE mode.



- Press the Set Button (11). The camera number-1 picture will be displayed for editing the title as shown.

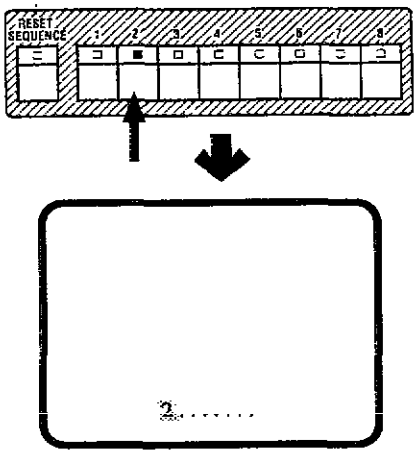


- Move the cursor to the position where you want to fix the letter.
- Select the letter referring to the Letters Table by operating the Select Button (10).

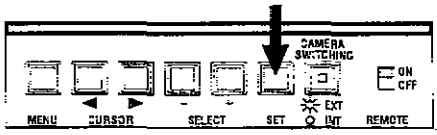
ABCDEFGHIJKLMNOPQRSTUVWXYZ
Ä Ü Ö Æ Ñ Å Ø
0 1 2 3 4 5 6 7 8 9
← → = ? ' " # & ( ) * + , - . / : ; -

- Repeat above procedure to complete editing.

- *Select and press one of the desired Camera Selection* Buttons (4) on the front panel to be set up the title. The selected camera picture with camera number will be displayed.



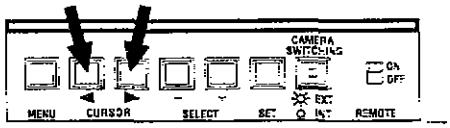
- Edit the title referring to the above procedure.
- Repeat above procedure for the rest of cameras.
  Note: When the title is to be cleared, press two Cursor Buttons (9) simultaneously.
- After being set, press the Set Button (11). The TITLE mode returns to the Menu 3 mode and the cursor moves to the T/D POSI mode.

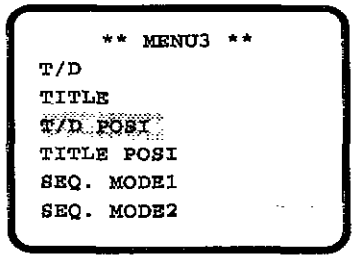


3. T/D POSI

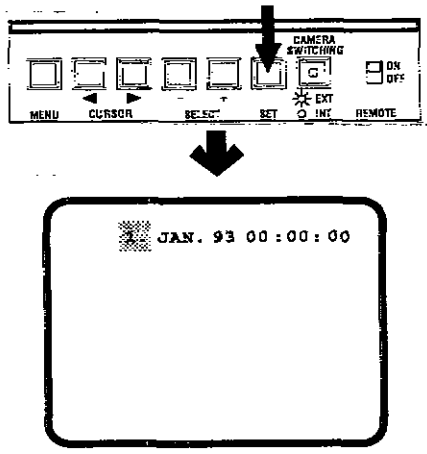
The position of the time and date on the screen can be changed using this mode.

- Reset the menu to the Menu 3 mode.
- Move the cursor using the Cursor Button (9) to the T/D POSI mode.

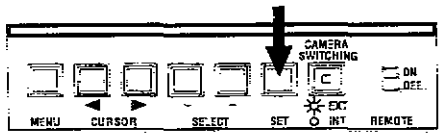




- Press the Set Button (11). The time and date will be displayed



- Operate the Cursor Button (9) to change the position of time and date horizontally.
- Operate the Select Button (10) to change the position of time and date vertically.
- After being set, press the Set Button (11). The T/D POSI mode returns to the Menu 3 mode and the cursor moves to the TITLE POSI mode.

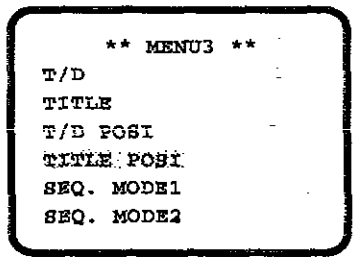


Note: The time/date and title can not be positioned on the same line.

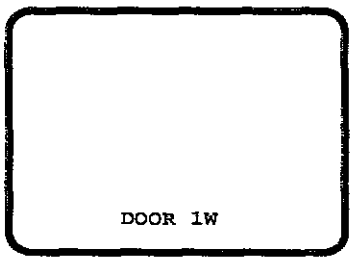
4. TITLE POSI

The position of the title on the screen can be changed using this mode.

- Reset the menu to the Menu 3 mode.
- Move the cursor using the Cursor Button (9) to the TITLE POSI mode.



- Press the Set Button (11). The title with camera-1 picture will be displayed.



- Operate the Cursor Button (9) to change the position of the title horizontally.
- Operate the Select Button (10) to change the position of the title vertically.
- After being set, press the Set Button (11). The TITLE POSI mode returns to the Menu 3 mode and the cursor moves to the SEQ. MODE 1 mode.

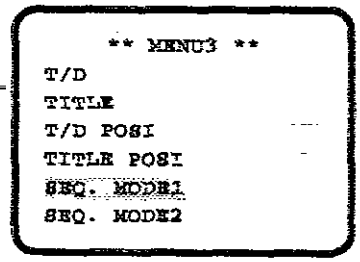
Notes:

1) The time/date and title can not be positioned on the same line.
2) The same position of the title will be applied for all cameras.

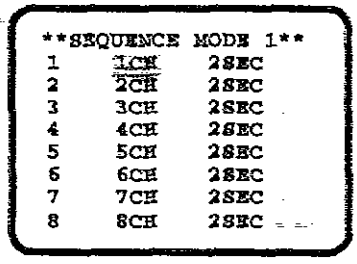
5. SEQ.MODE1

The sequence dwell time of the first mode can be programmed using this mode.

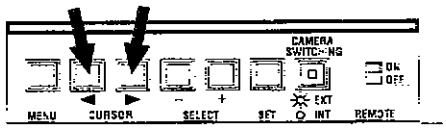
- Reset the menu to the Menu 3 mode.
- Move the cursor using the Cursor Button (9) to the SEQ.MODE1 MODE.

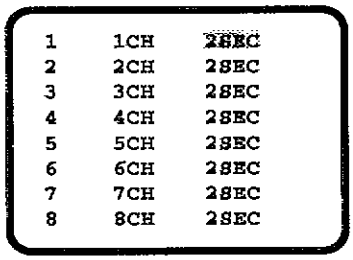


- Press the Set Button (11). The SEQ.MODE1 mode will be displayed.

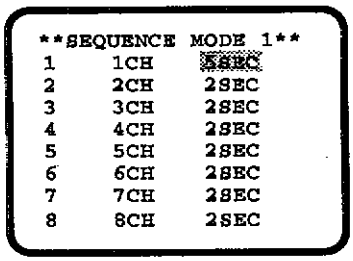


- *Operate the Cursor Button (9) to select the desired camera number or dwell time.*





- Operate the Select Button (10) to set up the desired camera number or dwell time. The dwell time can be set from 0 to 30 seconds.



Note: 0 second means skipping of the sequence.

- After being set, press the Set Button (11). The SEQ.MODE1 mode returns to the Menu 3 mode and the cursor moves to the SEQ.MODE2 mode.

6. SEQ.MODE2

The sequence dwell time of the second mode can be programmed with the same manner of 5.SEQ.MODE1.

- When you want to escape from Menu 3 mode, press the Menu Button (8).

SETTING UP OF THE TIME LAPSE VTR (AG-6730)

When the AG-6730 is used with WJ-FS20, read the operating instructions of AG-6730 and confirm following points.

A. Menu Screen 3

1. Item-3 : Select the input video signal to the LINE.
2. Item-5 : Set the time to 9:00.
3. Item-6 : Assign VTR's either Master or Slave.

B. Menu Screen 4

1. Item-5 : Set the alarm reset pulse acceptance level to match with the level of the Alarm Recover Output Terminal (30).

	WJ-FS20	AG-6730
SW901	Alarm Recover Output Terminal (30)	Alarm Reset Pulse
VTR	5V	HIGH
O.C.	0V	LOW

- SW901: This switch has been set to the VTR position at factory. (See page4.)

2. Item-6 : Set the camera switch timing to 1.
3. Item-7 : Set the camera switching mode to TM2.

C. VITC signal (option)

Do not align this signal with ID-code of WJ-FS20. The VITC should be placed at 11H and 13H.

OPERATION

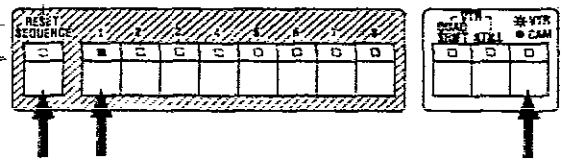
Notes:

1. Make sure that the Remote On/Off Switch (13) should be in the OFF position.
2. Set up the Menu 1 - 3 before starting the operation.

A. Monitoring of the Camera Picture

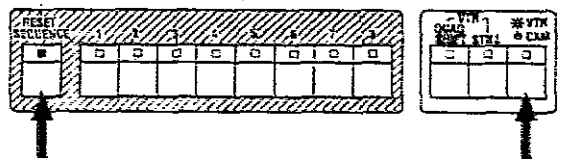
- Set the Time Lapse VTR to the stop mode or recording mode.

1. Single picture



- Press the VTR/Camera Selection Buttons (7) to turn off the LED.
- Press the Sequence/Alarm Reset Button (2) to turn off the LED.
- Select the desired camera from the Camera Selection Button (4) and press the button. The LED is turned on.
- The selected camera picture will be seen on the monitor TV.

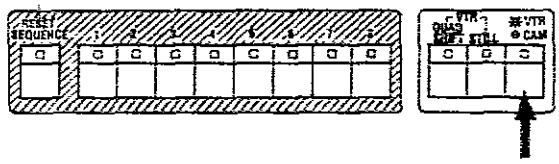
2. Sequential switching picture



- Press the VTR/Camera Selection Buttons (7) to turn off the LED.
- Press the Sequence/Alarm Reset Button (2) to turn on the LED. The sequential switching will be performed with the menu being set up previously.

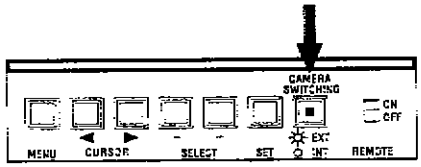
B. Recording on the Time Lapse VTR

- Set the Time Lapse VTR to the recording mode.
- Make sure that the LED on the VTR/Camera Selection Buttons (7) is turned off.



B-1. Time Lapse recording

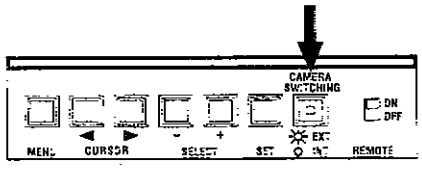
- Press the Time Lapse Recording/Normal Recording Selection Button (12) to turn on the LED, which is EXT mode.



- The Time Lapse recording is performed with the camera switching pulse supplied by the Time Lapse VTR.
- When the WJ-FS20 receives the alarm signal, the LED on the Time Lapse Recording/Normal Recording Selection Button (12) becomes off and the recording mode changes to the normal recording mode.
- When the alarm mode is canceled, the LED on the Time Lapse Recording/Normal Recording Selection Button (12) becomes off and the recording mode returns to the Time Lapse recording mode.

B-2. Normal recording

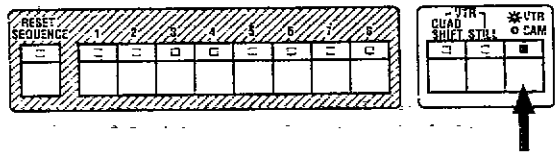
- Press the Time Lapse Recording/Normal Recording Selection Button (12) to turn off the LED, which is INT mode.



- The normal recording is performed with the camera switching pulse supplied by the WJ-FS20.
- The same recording mode continues regardless of the alarm signal.
  1. The recording speed of the Time Lapse VTR should be set to 3 hours recording mode.
  2. TheTitle and Time/Date can be recording.
  3. The recording signal is provided to the Recording Output Connector (18) during setting up of the menu.
  4. No recording signal is provided to the Recording Output Connector (18) during the LED on the VTR/ Camera Selection Buttons (7) is turned on.

C. Monitoring of the Time Lapse VTR playback picture

- Set the Time Lapse VTR to the playback mode.
- Press the VTR/Camera Selection Buttons (7) to turn on the LED.

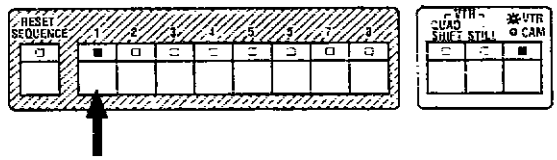


Notes:

1. The playback picture may have vertical vibrations due to the field recording system.
2. The playback picture will be disturbed in the Fast-forward playback mode and Reverse-playback mode of the VTR.
3. It may take time to have a playback picture of the specific camera while the Time-Lapse VTR is under the time-lapse playback mode.

1. Single picture

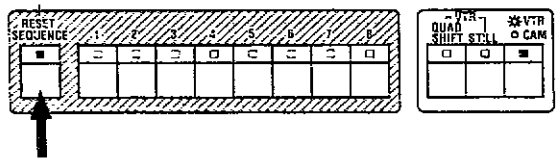
- Select and press the desired camera number on the Camera Selection Buttons (4). The LED is turned on.



2. Sequential switching picture

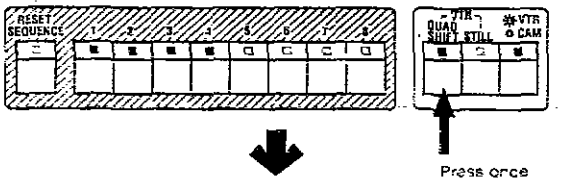
- Press the Sequence/Alarm Reset Button (2) to turn on the LED

Note: Set the Time Lapse VTR to the normal playback mode.

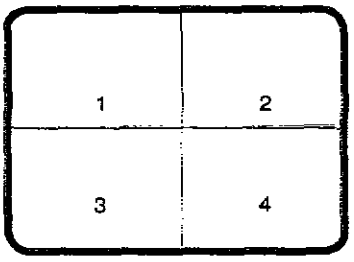


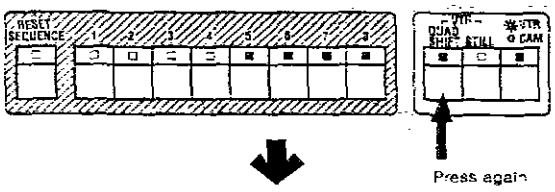
3. Quad-mode picture.

- Press the Quad Shift Button (5) once. The quad-mode picture will be displayed. When you press this button again, another quad-mode picture will be displayed. The 2 quad-mode pictures will be displayed in turns by pressing this button repeatedly.

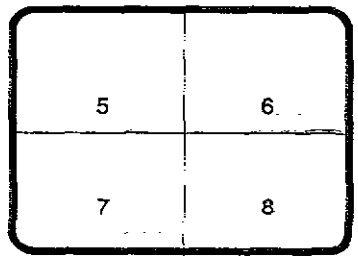


Press once



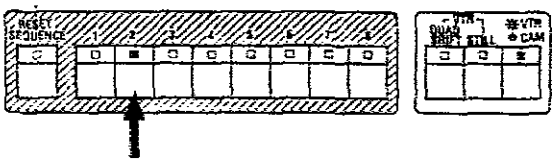


Press again

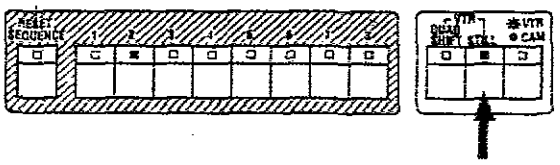


Note: 4 LED's on the selected Camera Selection Buttons (4) light up.

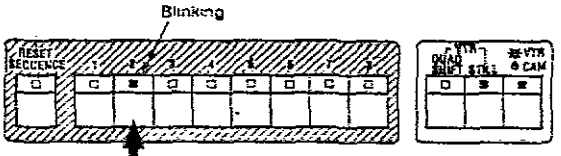
- Select and press the desired camera number on the Camera Selection Buttons (4). The LED is turned on.



- Press the Still Button (6). The LED is turned on.



- Press the selected camera number on the Camera Selection Buttons (4) again. The LED starts blinking and the still picture will be obtained.

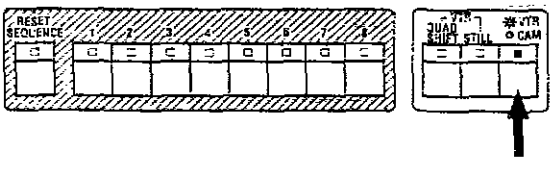


Press again

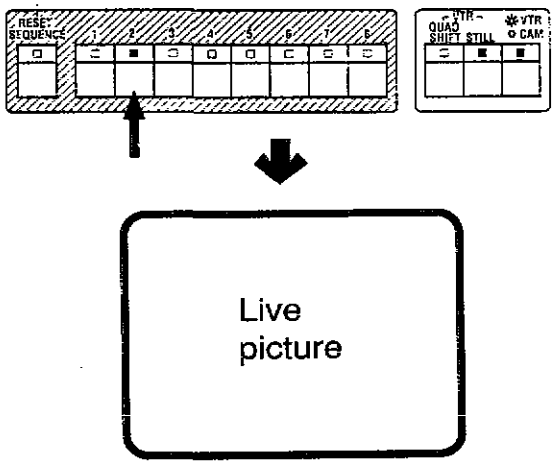
4.Still mode picture

4-1. Single still picture

- Press the VTR/Camera Selection Buttons (7) to turn on the LED.



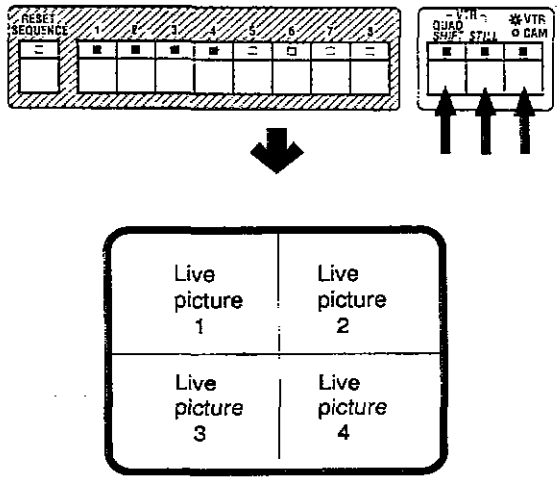
- If you press this button again, the still picture changes to the camera picture and the LED is turned on continuously.



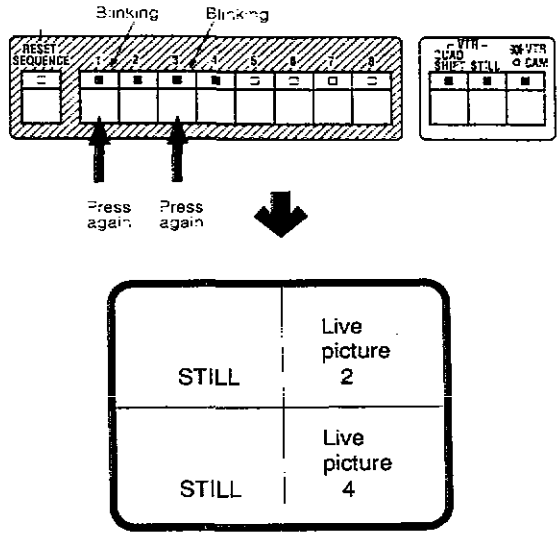
Note: To change the camera number, press the Still Button (6) again to turn off the LED. Then repeat above procedure.

4-2. Quad-mode still picture

- Press the VTR/Camera Selection Buttons (7) to turn on the LED.
- Press the Still Button (6). The LED is turned on.
- Press the Quad Shift Button (5). The LED is turned on.
- The 4 LED's on the Camera Selection Buttons (4) are turned on.



- Select and press any of four camera numbers, the LED's on the selected camera numbers start blinking and the still pictures are obtained. If these buttons are pressed again, the still pictures return to the camera picture.



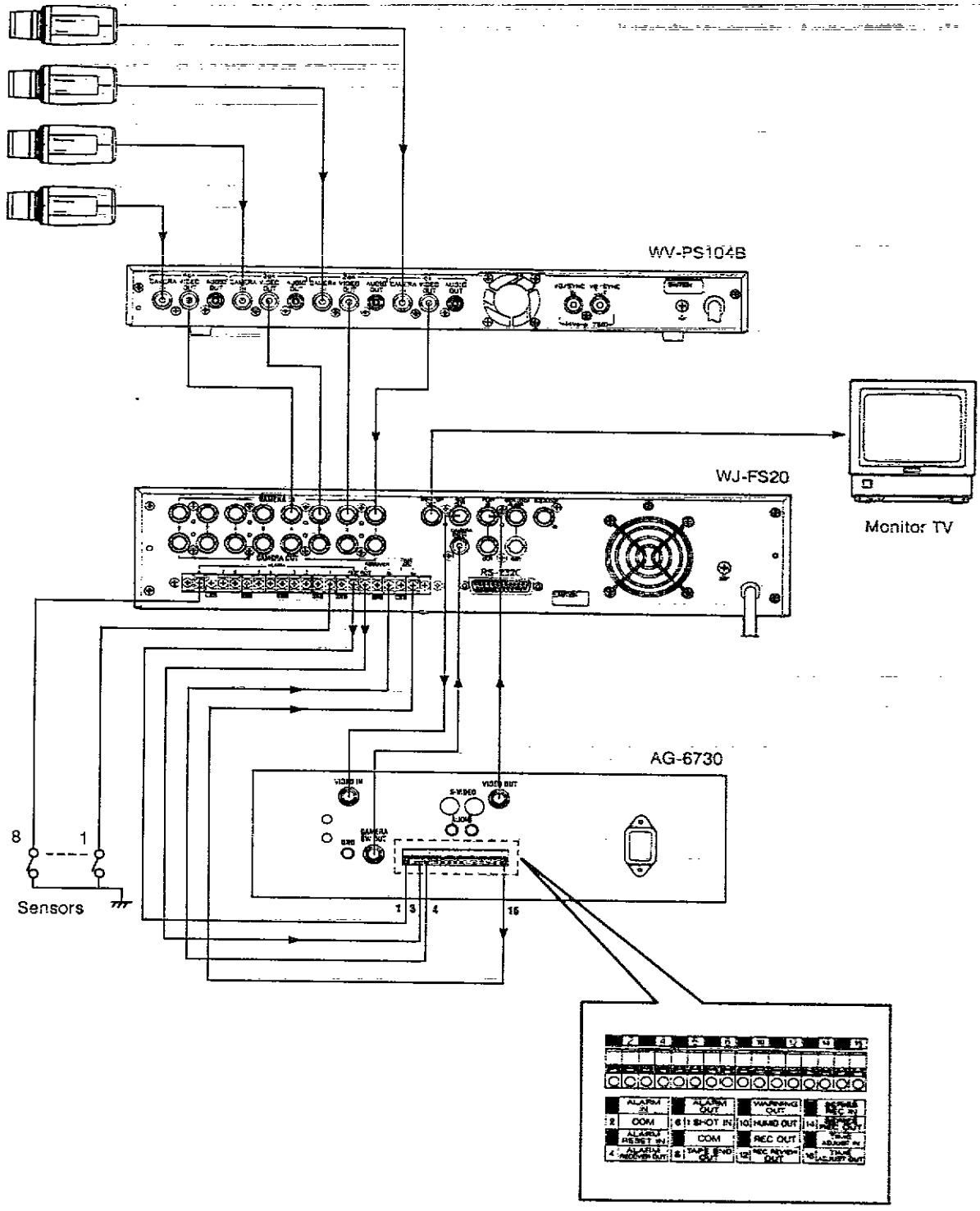
Notes:

1. The letter of "STILL" will be displayed on the still picture.
2. If the alarm signal is supplied to the WJ-FS20 during Still-mode, the still picture changes to the camera picture.
3. Even if you see the still picture on the monitor TV, the tape of Time Lapse VTR is running.

SYSTEM APPLICATIONS

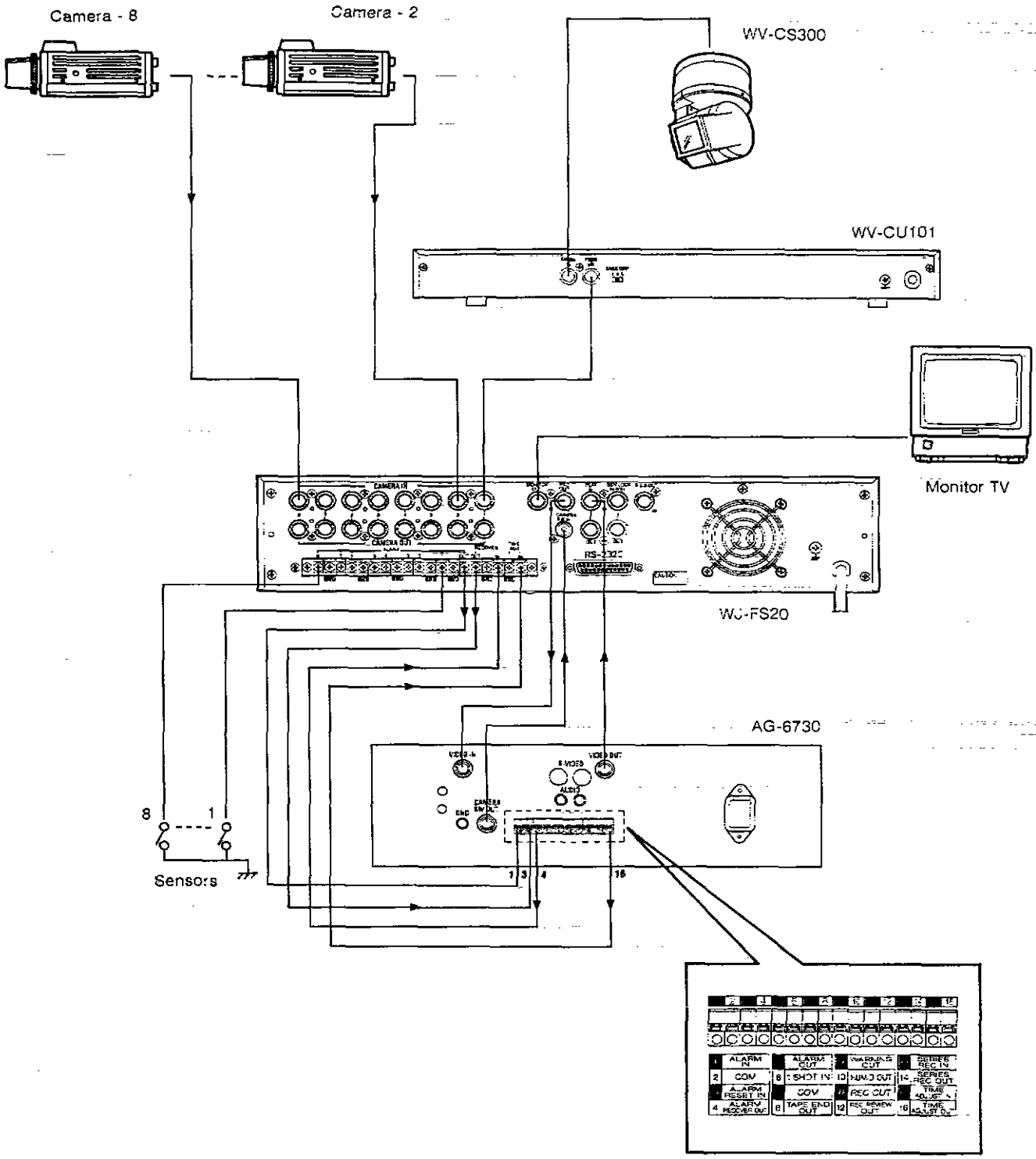
■ Refer to the operating instructions of each system component for connection and operation.

1. Connection with Mini-CCTV Cameras



Note: WV-80 can not be used in this system.
Consult your dealer for cameras.

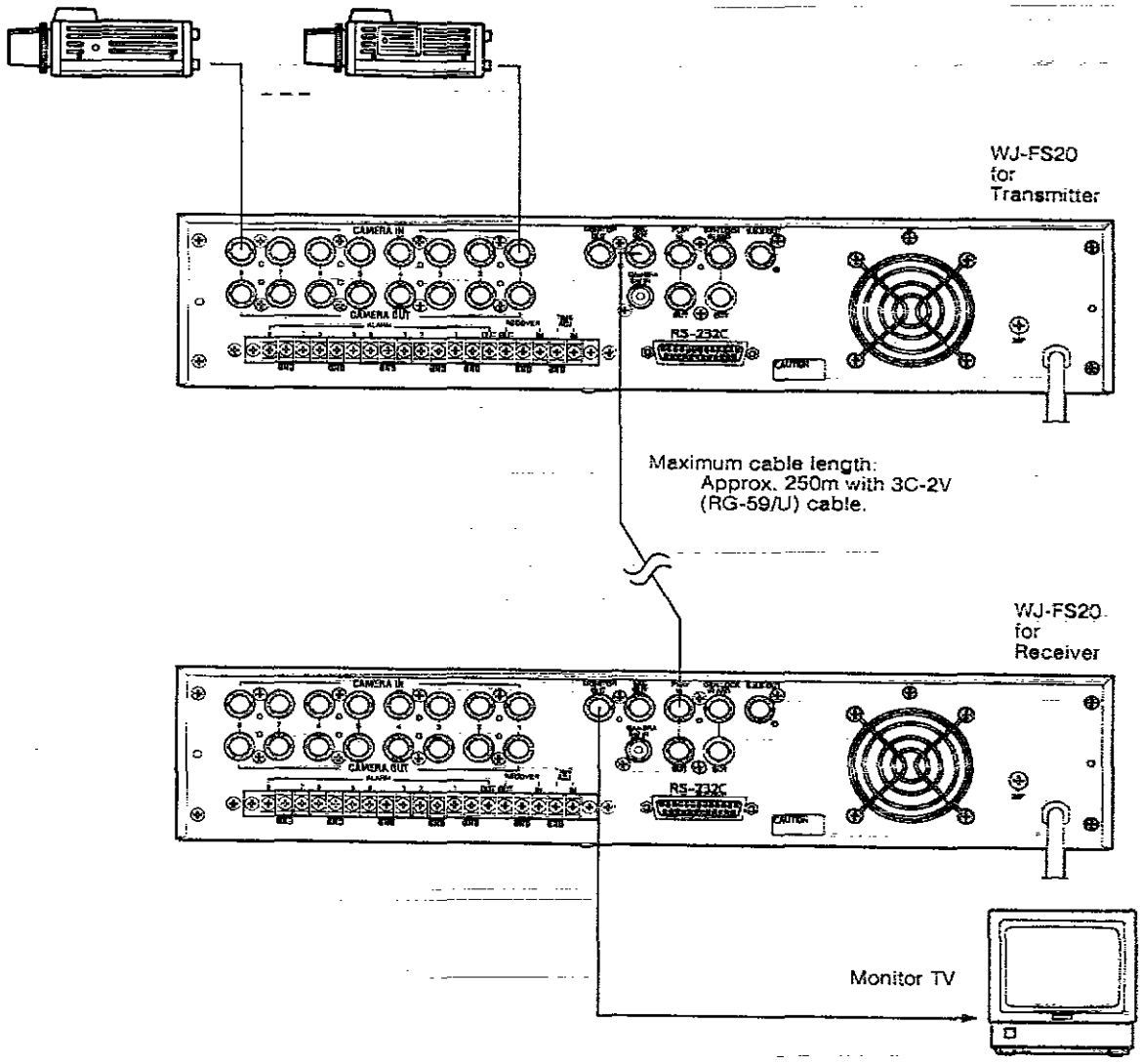
2. Connection with System 100



Note: Consult your dealer for cameras.

3. Remote operation-1

- The picture of 8 cameras can be transmitted over single cable.

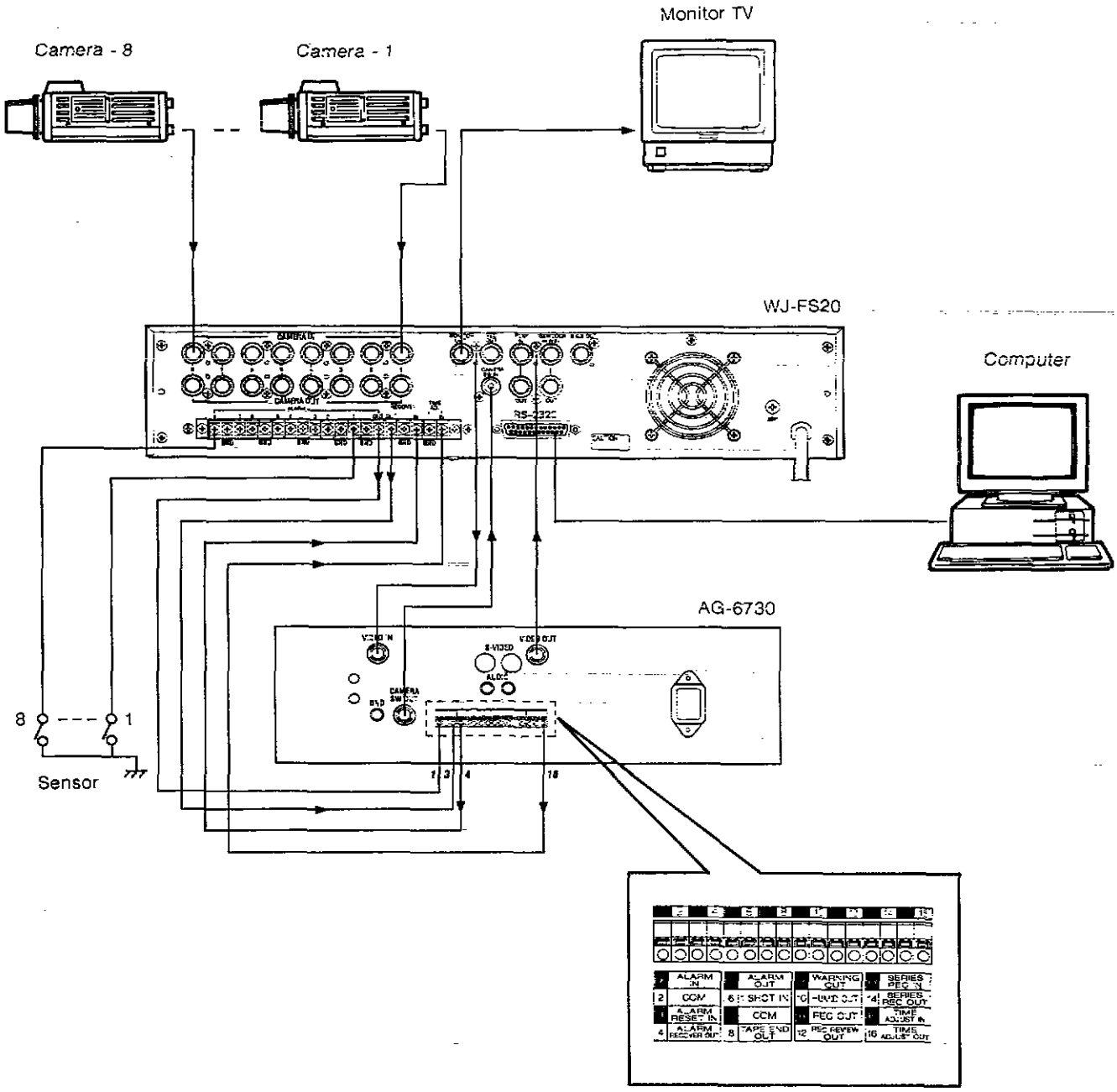


Notes:

1. Press the Time Lapse Recording/Normal Recording Selection Button (12) on the Transmitter-side to turn off the LED.
2. Press the VTR/Camera Selection Button (7) on the Transmitter-side to turn off the LED.
3. Press the VTR/Camera Selection Button (7) on the Receiver-side to turn on the LED.
4. Do not connect cameras to the Receiver-side.
5. The WJ-FS20 on the Receiver side will have the functions which described in C. Moitoring of the Time Lapse VTR playback picture on page 23.
6. Consult your dealer for cameras.

4. Remote operation-2

- *System remotely controlled by the personal computer.*



Notes:

1. The functions to be remotely controlled by the computer are the buttons on the front panel except buttons on the sub-panel.
2. *Turn the Remote On/Off Switch (13) to the ON position.*
3. Consult your system installer for programming the software.

4-1. RS-232C specifications

- Pin configuration
  1. FG (Frame ground)
  2. SD (TXD)
  3. RD (RXD)
  4. RS (RTS)
  5. CS (CTS)
  6. DR (DSR)
  7. SG (Signal ground)
  20. ER (DTR)

  Other pins are not used.

- Connection

Computer		WJ-FS20 (DCE)
1. FG	———	1. FG
2. SD	———	2. SD
3. RD	———	3. RD
4. RS	———	4. RS
5. CS	———	5. CS
6. DR	———	6. DR
7. SG	———	7. SG
20. ER	———	20. ER

- Communication protocol

1) Baud rate:	4800bps
2) Parity bit:	7 bits
3) Stop bit:	1 bit
4) Parity mode:	ODD
5) X-ON/OFF:	OFF

4-2. Command Table

<Protocol>
Baud rate: 4,800 bps
Data bot: 7 bits
Stop bit: 1 bit
Parity: Odd
X-ON/OFF: OFF

<Transmitting Format>

1		[STX]	[ ]	[ ]	[ETX]					
	ASCII	(02H)	( )	( )	(03H)					
2		[STX]	[ ]	[ ]	[ ]	[:]	[ ]	[ ]	[ ]	[ETX]
	ASCII	(02H)	( )	( )	( )	(3AH)	( )	( )	( )	(03H)
3		[NAK]	[ ]							
	ASCII	(15H)	( )							

• ( ) ASCII cord

Inquiry command from PC to WJ-FS20	
[STX] [O] [0] [1] [ETX]	Spot of Cam. 1
[STX] [O] [0] [2] [ETX]	Spot of Cam. 2
[STX] [O] [0] [3] [ETX]	Spot of Cam. 3
[STX] [O] [0] [4] [ETX]	Spot of Cam. 4
[STX] [O] [0] [5] [ETX]	Spot of Cam. 5
[STX] [O] [0] [6] [ETX]	Spot of Cam. 6
[STX] [O] [0] [7] [ETX]	Spot of Cam. 7
[STX] [O] [0] [8] [ETX]	Spot of Cam. 8
[STX] [O] [S] [Q] [ETX]	SEQ started
[STX] [O] [Q] [U] [ETX]	Quad sent
[STX] [O] [F] [Z] [ETX]	Still-mode ON/OFF
[STX] [O] [V] [C] [ETX]	VTR/Camera selection
[STX] [O] [A] [H] [ETX]	Alarm recover
[STX] [Q] [I] [D] [ETX]	Inquiry of model number
[STX] [Q] [R] [V] [ETX]	Inquiry of ROM version
[STX] [Q] [M] [O] [ETX]	Inquiry of WJ-FS20's state
[STX] [Q] [S] [W] [ETX]	Inquiry of state of the buttons on WJ-FS20

How to read the Response Command Signal

- Take one of data from each "Selection".
- The number of the Response Commands can be made up of the combination of the "Selection".

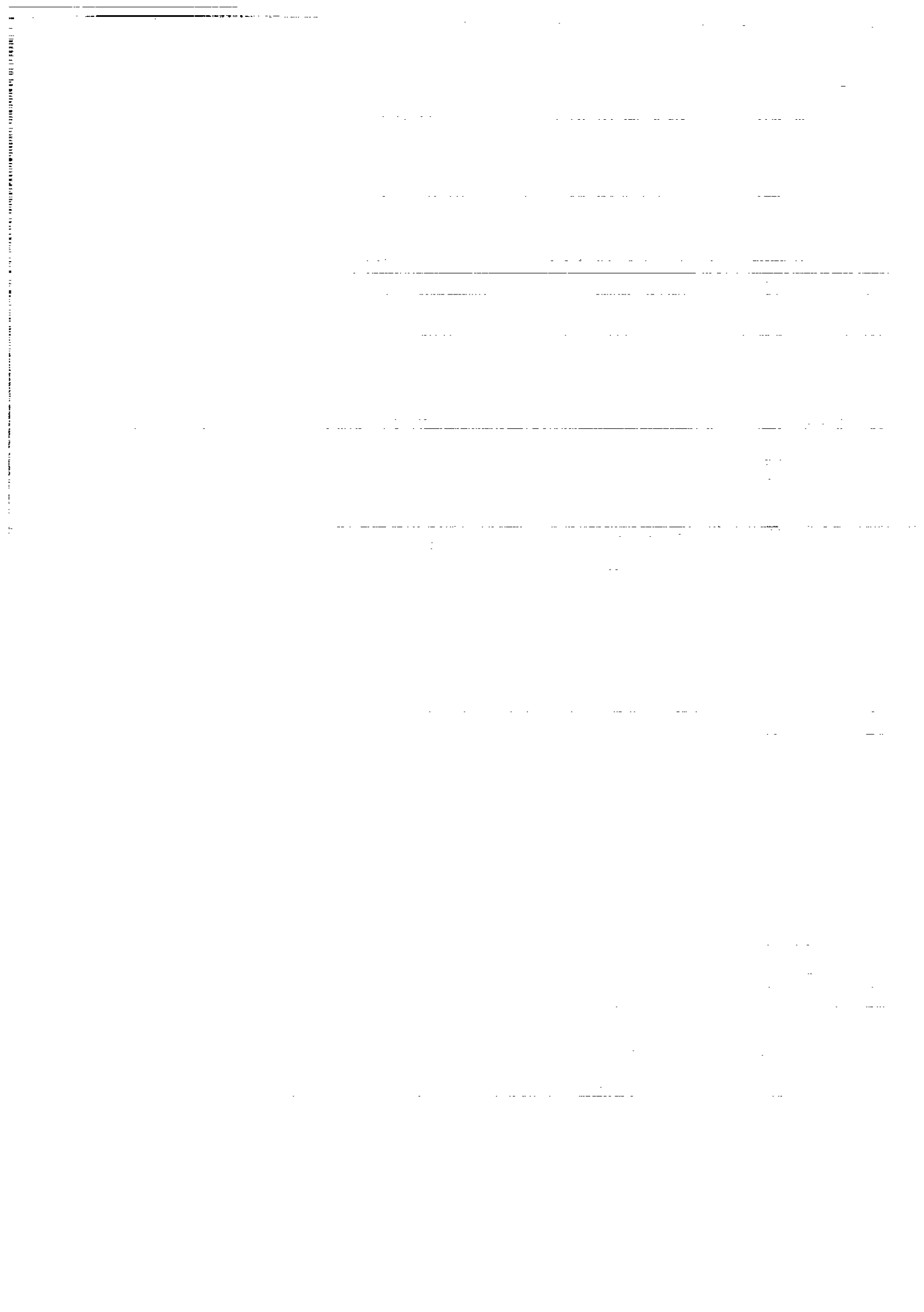
<For example>

[STX] [1] [M] [ETX]
[2] [F]

"Selection" "Selection"

1. [STX] [1] [M] [ETX]
2. [STX] [1] [F] [ETX]
3. [STX] [2] [M] [ETX]
4. [STX] [2] [F] [ETX]

* 4 kinds of combinations are available.



Response command from WJ-FS20 to PC

If Response command is same as Inquiry command, this means that WJ-FS20 received command correctly.

```
[STX][E][R][1][ETX]  – Receiving data disables analysis
[STX][E][R][2][ETX]  – Remote control prohibites
[STX][E][R][3][ETX]  – Processing disabled
[STX][E][R][4][ETX]  – Sequence error

[NAK][1]  – Parity error
[NAK][3]  – Framing error
[NAK][4]  – Over-run error
```

```
[STX][M][D][L][:][W][J][-][F][S][2][0][ETX]
[STX][V][E][R][:][2][.][0][8][ETX]
```

```
[STX][Q][M][O][:][C][1][Q][:][0][0][1][ETX]
                              [0][0][2]
                              [E][X][T]
```

SEQ/one camera

Selection of MODE

```
[STX][Q][M][O][:][V][1][Q][:][0][0][1][:][0][1][M][:][I][D][Y][ETX]
                              [0][0][2]       [2][F]        [N]
                              [E][X][T]       [3]
                                              [4]
                                              [5]
                                              [6]
                                              [7]
                                              [8]
```

SEQ/playback one picture

Selection of MODE

Selection of ID: Yes or No

Selection of Moving or Still

Selection of camera number

```
[STX][Q][M][O][:][C][1][P][:][0][1][M][ETX]
                             [2]
                             [3]
                             [4]
                             [5]
                             [6]
                             [7]
                             [8]
```

Spot/one camera

Selection of camera number

```
[STX][Q][M][O][:][V][1][P][:][0][1][M][:][I][D][Y][ETX]
                             [2][F]        [N]
                             [3]
                             [4]
                             [5]
                             [6]
                             [7]
                             [8]
```

Spot/playback one picture

Selection of ID: Yes or No

Selection of Moving or Still

Selection of camera number

```
[STX][Q][M][O][:][V][4][P][:][0][1][M][:][0][2][M][:][0][3][M][:][0][4][M][:][I][D][Y][ETX]
                             [5][F]        [6][F]        [7][F]        [8][F]        [N]
```

Spot/playback quad picture

Selection of camera number

Selection of Moving or Still

Selection of ID: Yes or No

```
[STX][Q][M][O][:][W][A][L][:][0][1][X][ETX]
                             [2]
                             [3]
                             [4]
                             [5]
                             [6]
                             [7]
                             [8]
```

In alarm mode

Selection of camera number

```
[STX][Q][M][O][:][W][M][E][ETX]  – Under setting up of mode

[STX][E][R][1][ETX]  – Receiving data disables analysis
[STX][E][R][2][ETX]  – Remote control prohibited
[STX][E][R][3][ETX]  – Processing disabled
[STX][E][R][4][ETX]  – Sequence error

[NAK][1]  – Parity error
[NAK][3]  – Framing error
[NAK][4]  – Over-run error

[STX][Q][S][W][:][K][S][Q][0][ETX]  – Sequence button OFF
[STX][Q][S][W][:][K][S][Q][1][ETX]  – Sequence button ON
[STX][Q][S][W][:][K][F][Z][0][ETX]  – Still button OFF
[STX][Q][S][W][:][K][F][Z][1][ETX]  – Still button ON
[STX][Q][S][W][:][K][V][C][0][ETX]  – VTR/camera button OFF
[STX][Q][S][W][:][K][V][C][1][ETX]  – VTR/camera button ON
[STX][Q][S][W][:][K][M][E][0][ETX]  – Menu button OFF
[STX][Q][S][W][:][K][M][E][1][ETX]  – Menu button ON
```

```
[STX][E][R][1][ETX]  – Receiving data disables analysis
[STX][E][R][2][ETX]  – Remote control prohibited
[STX][E][R][3][ETX]  – Processing disabled
[STX][E][R][4][ETX]  – Sequence error

[NAK][1]  – Parity error
[NAK][3]  – Framing error
[NAK][4]  – Over-run error
```

SPECIFICATIONS

Power Source :	220 - 240 VAC 50Hz
Power Consumption :	20 W
Camera Input :	X8 (BNC) 2:1 interlaced VBS 1.0Vp-p/75ohms, 75ohms automatic termination/looping through
Playback Input :	X1 (BNC) VBS 1.0Vp-p/75ohms, 75ohms automatic termination/looping through
Gen-Lock Input :	X1 (BNC) VS 1.0Vp-p/75ohms, 75ohms automatic termination/looping through
Monitor Output :	X1 (BNC) VBS 1.0Vp-p/75ohms
Recording Output :	X1 (BNC) VBS 1.0Vp-p/75ohms
Sync Output :	X1 (BNC) BBS 0.45Vp-p/75ohms
Camera Switching Input :	X1 RCA pin jack
Alarm Input :	X8
Alarm Output :	X1 Open-collector 24VDC 100mA max.
Alarm Recover Input :	X1
Alarm Recover Output :	X1 VTR/Open-collector switchable
Time Adjustment Input:	X1
Operating Temperature :	-10°C - +50°C
Operating Humidity :	Less than 90%
Dimensions :	420(W) x 88(H) x 350(D) mm
Weight :	5.5 kg

Dimensions and weight are approximate.
Specifications are subject to change without notice.

STANDARD ACCESSORIES

Rack Mount Angle ..... 2 pcs.
Screws (M4 x 10) ..... 4 pcs.